NEWS line
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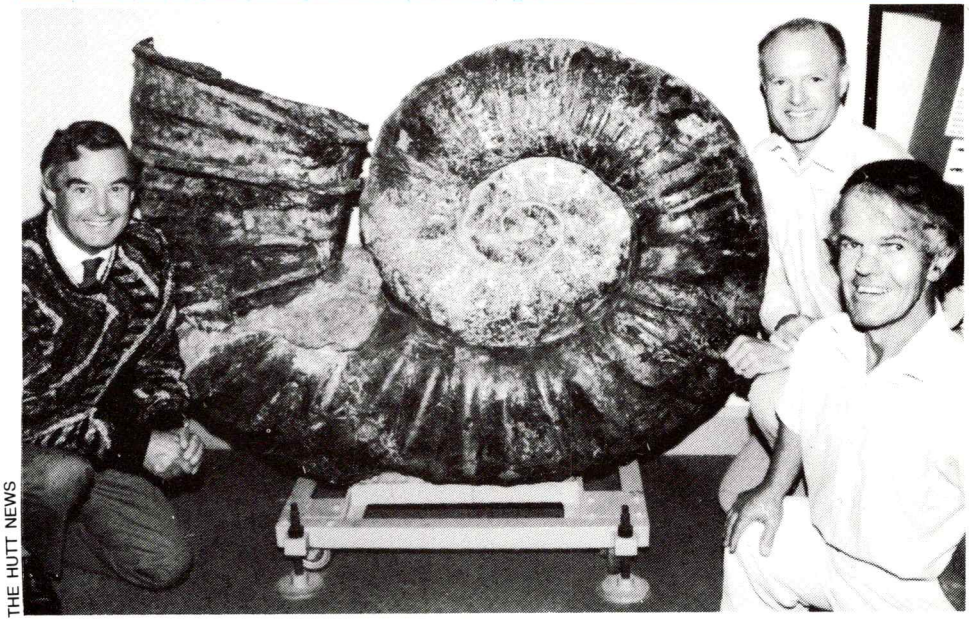
DSIR



THE HUTT NEWS

Graeme Stevens, Ian Keyes and Ron Brazier, authors of "The Great New Zealand Fossil Book" in front of a Giant Ammonite fossil found in the Kawhia region.

The Giant Ammonite was a giant squid-like animal that lived over 145 million years ago. The fossil is the largest of its kind ever found and measures 1.5 metres across. The fossil is on display at Geology and Geophysics in Lower Hutt.

At last — the Great New Zealand Fossil Book

One of the first educational resource books dealing solely with New Zealand fossils has been produced by Geology and Geophysics.

The Great New Zealand Fossil Book forms part of a classroom package including posters and postcards developed in response to many requests for local resource material.

Featuring some of New Zealand's "more spectacular fossils" the project was the work of authors Graeme Stevens, Ian Keyes and artist Ron Brazier.

They say the package was three years in the making on and off.

The fossils it explores are from 25 to 600 million years in age.

Research for both the text and illustrations involved a "lot of digging around" to keep it scientifically accurate.

The set is aimed at a wide age-range, from primary school children to first year university students, as well as the general public.

The idea for a book came up in conversation between the three several years ago.

"We'd all seen various overseas publications dealing with the subject and realised there was a dearth of resource material on our own fossils," Graeme Stevens said.

While not denigrating overseas publications, they felt it was a shame that New Zealand school children were studying animals found in the Grand Canyon instead of in their own country.

"In fact we have very interesting fossils here and we have chosen the biggest, best and more unusual ones for the package," Ian Keyes said.

Reconstructing what the animals looked like was done from samples of bone, some of which were the size of a human finger.

"We start with what may be a very small piece of bone and flesh it out from there," Keyes said.

The authors found writing the book to be accessible to a wide readership including children quite daunting.

"It was very difficult to write for that audience. We had to revise and revise to get the text right and ensure we got rid of big and confusing words," Keyes said.

Thirty-three illustrations are included in the book, as well as photos and scale drawings showing the size of the animals.

The 112-page book will sell for $39.95 and the set of seven posters for $40. The postcards, smaller versions of the posters, are 80 cents each. Contact Information Section, Geology and Geophysics, Box 30-368, Lower Hutt.

Mike Collins:

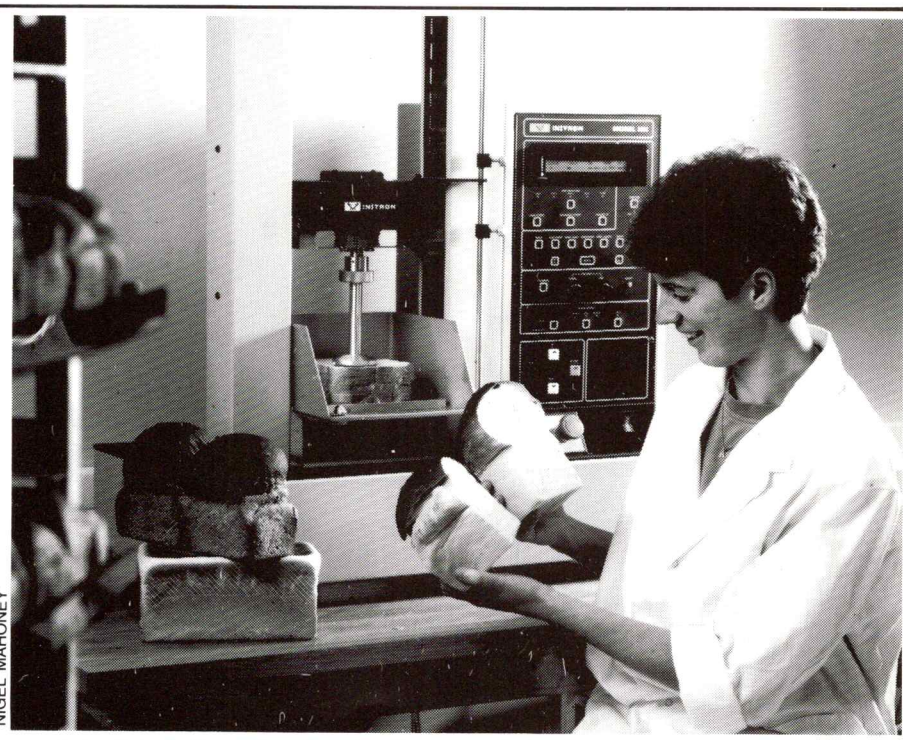
March has been a very busy month for the Science and Technology Task Group as they have conducted their workshops at various centres throughout New Zealand. A number of DSIR people have been involved in these workshops, and from the reports I have received they have found them a very worthwhile exercise in communication and an opportunity to ensure that members of the Task Group appreciate the science that is being done within our department. I was involved personally in the final workshop where chief executives and business leaders discussed with the Task Group where they had got to, and what we felt were the important issues. Obviously the welfare of staff and the maintenance of our scientific skills were very high on the priority list, and supported by all parties.

On 17 April the Task Group report should be available to staff in its preliminary form to see what they are recommending, and to allow the opportunity for feedback or comment on the practicalities of their proposals for the new CRIs and the framework in which they will operate. I recommend you read this document and make your comments known either individually or collectively to the Task Group.

As most of you know we were required during the month to declare 31 further surpluses in the Department. This is an exercise that is never easy but I am grateful for the help that was given to me by Directors and staff in making these hard decisions and in making the process as easy as possible for those concerned. We are making a very real attempt to find alternative jobs for as many as we can of those people. To this end I have written to the chief executives of all the public sector organisations to see what they have available. It looks as though we may be successful in at least a couple of cases.

Following the annual general workplace meetings of the Public Service Association I have received copies of a number of motions passed at those meetings and asked to pass comment on them. Primarily these have related to the up coming wage round and the Employment Contracts Bill. As a chief executive of a government department it is quite improper for me to comment publicly on matters of government policy such as the Employment Contracts Bill.

With so much concentration on financial difficulties and change it was nice to be able to focus on science during the month. This was the very pleasant occasion of the award of a Director-General's award to Dr Peter Wardle of DSIR Land Resources in Lincoln. Peter's work on the timber-line has earned him an enviable international reputation and brought great credit to himself and his colleagues in DSIR with the award of the Royal Society's Hector Medal late last year. Congratulations again Peter, it is good that we can demonstrate that we are still doing quality science.



NIGEL MAHONEY

Scientist Anthea Wooding in the new Grain Processing Laboratory taking measurements of crumb firmness (staling) of bread. The loaf in her right hand has greater consumer appeal as a result of improved wheat varieties, new processing methods and the use of emulsified fats to replace lard.

New Grain Processing Laboratory opened

A $600,000 laboratory to research new products and technolgies for the cereal industry was opened by DSIR's Minister Denis Marshall at Lincoln in March.

The new Grain Processing Laboratory forms part of Crop Research and evolved from the former Wheat Research Institute.

Laboratory manager Tim Lindley said development of value-added products for export and research into cereal proteins and enzymes were increasingly important aspects of the work undertaken.

Researchers were currently studying products which combined flour with butter such as pastries, frozen dough, cakes and biscuits.

This work aimed to increase the export of cereal based products in a more finished form.

The opening of the new building marked a broadening of the research effort to include cereals other than wheat, Tim Lindley said.

The traditional quality assurance role of the laboratory remained, but the major activity was research.

Current research identifying natural enzymes in cereals would have applications beyond the grain and baking industry itself, he said.

"As well as refining the quality of bread making, enzymes are being used increasingly in many other parts of the food industry."

Scientists were also developing new technologies for the baking industry to increase energy efficiencies such as devices to check for hot spots in large commercial ovens.

The facility served both cereal growers and the food industry throughout New Zealand, although most grain farming was based in the Canterbury region.

In the quality assurance area the laboratory had developed a technique for testing bread baking potential from a single grain of wheat, he said.

"This test can be used at a very early stage in the breeding programmes to identify wheats that will be winners."

The new laboratory building would house 10 staff as well as their specialised baking, milling and testing equipment.

Where there's muck there's brass

Homeowners who are sick of buying topsoil full of weeds, stones and clay will soon be able to buy a manufactured soil with consistent high quality.

Jenny August, marketing manager with DSIR Land Resources in Wellington, has co-ordinated a team trying to develop and market a soil made from waste products.

"We believe we can get a product with the same quality all the time," she said.

Local authorities in some areas are becoming concerned about topsoil stripping and they are keen to support any alternative.

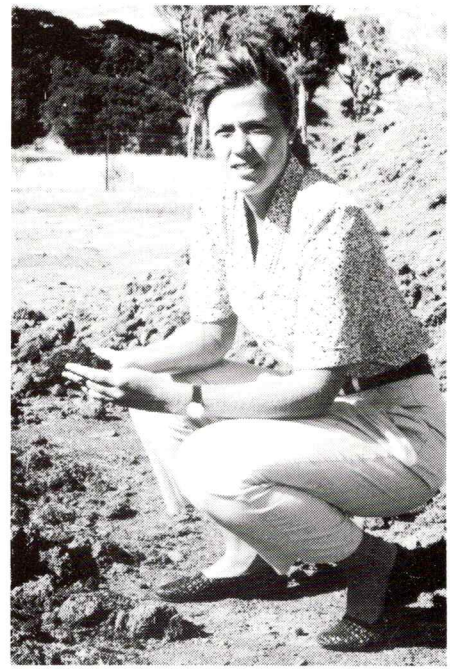
The product called Biosoil Loam has been developed out of the work that August and other Land Resources scientists have done on topsoil mining, waste recycling and land rehabilitation.

The components which make up the topsoil are derived from organic and waste products. The formula is a commercial secret.

After field trials on the performance of the new soil over the next few months Wellington topsoil supplier Cottle Top Soil plans to begin production next year under licence to DSIR Land Resources.

Wellington has the biggest market for topsoil in New Zealand with about 30,000 cubic metres sold each year.

Market research has shown that 60 per cent of Wellington home gardeners are very interested in trying Biosoil Loam, August said.

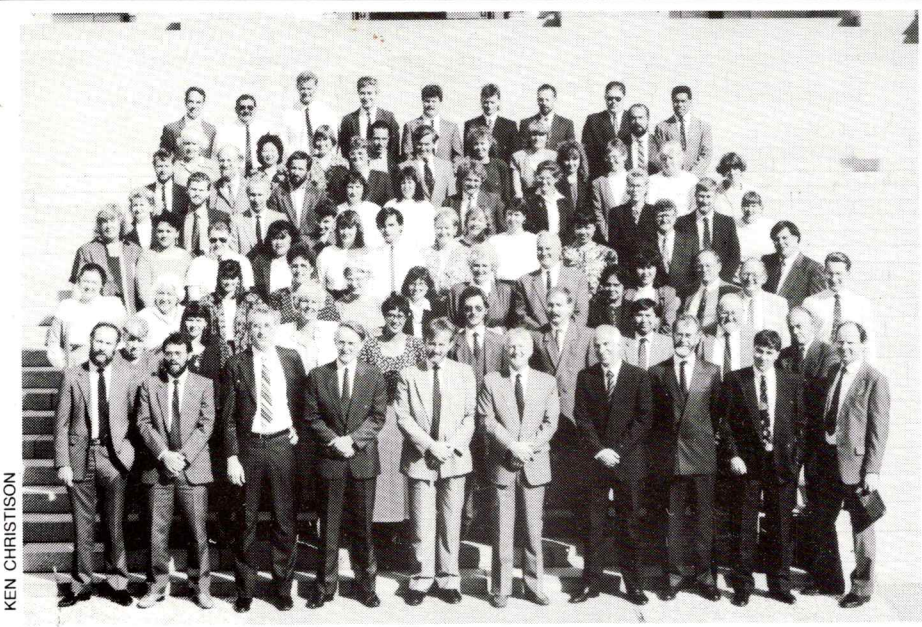


Land Resources' Jenny August.

Like natural topsoil it will have multi-purpose uses for landscaping, lawns and gardening rather than the more specific uses of potting mix and compost.

DSIR will earn a royalty from the product and hopes to be able to market the technology overseas.

Jenny August won first prize for her Biosoil Loam business plan in the 1990 Ernst and Young Business Plan Award.



KEN CHRISTISON

***SILENT PROTEST?** Eighty Headquarters staff marched to the steps of Parliament on March 19 in a procession notable for its lack of banners or chanted slogans.*

So subtle was their action that the Prime Minister nearly invited them for tea thinking they were a group of his back benchers he hadn't got around to meeting yet.

Gumboot crisis averted

One of Australasia's major producers of gumboots was rescued from a complete shut down recently by Christchurch Industrial Development scientist Bob Redfern.

Skellerup in Christchurch suffered a disaster last year when a vital component of their million dollar gumboot injection moulding machine cracked.

The eight-year-old Italian machine can produce a pair of gumboots in as little as twenty seconds.

Shipping a replacement part out from Italy would have taken several months so the company approached DSIR to advise on the possibility of a temporary repair.

Meanwhile all production was stopped with the four operators and many packing and distribution staff left idle.

Although it was a difficult and daunting repair job Bob Redfern appreciated the situation the company was in.

"This is the danger when you're relying on one machine. When it breaks what the hell can you do?

"When I said we'd supervise the repair, at no time did I say it would work. It was a very complex stress situation and I didn't have time to evaluate it properly."

The part in question was a massive clamp weighing close to half a tonne and subject to huge loads.

The repair job, carried out by local welding company Welding Maintenance (Christchurch) Ltd, took 24 hours of continuous welding with the two welders taking turns around the clock.

Bob Redfern supervised the work, advising on the welding material to be used, the necessary preheating process, and checked on progress several times a day.

The welds themselves were four inches thick and six inches deep.

In all the machine was out of action for only three days from when the company decided to undertake the work.

Obtaining a replacement part ended up taking eight months in total, but the repair was still holding perfectly at the end of that time.

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In brief

Lonesome caller

Telephone callers to Grasslands are really made to feel at home with appropriate musak. The snatch of lyrics caught from one sad singer was:" I wonder why I'm left here on my own . . ."

* * *

Back to the future

Plenty of former employees return to their old places of work for a visit, but the visit of Arthur Jamieson to Grasslands in Palmerston North recently was special.

Now in his late seventies, Arthur left Grasslands way back in the early 1930s!

He was a cadet at Grasslands before moving into another pastoral industry altogether — he left to pursue a career in the church.

He is presently an extramural student at Massey.

* * *

Beetlemania

Fifteen years of intensive study by Mount Albert entomologist Willie Kuschel have shown how important small pockets of suburban bush can be for the conservation of native insects.

He surveyed 36 hectares of bush in Lynfield, Auckland, concentrating on the beetle population, of which he found 982 species.

The results of the Lynfield survey have just been published in a book called *Beetles in a suburban environment; a New Zealand case study,* launched on 25 March.

Of the 753 native beetle species found, almost all were restricted to native bush and were rarely found on the same native plants grown in nearby suburban gardens.

* * *

Comfort for aging staff

Staff older than 40 can gain comfort from a British survey that says they are more competitive, astute and decisive than younger colleagues.

They become more persuasive and critical, but friendlier, says a survey of 175 finance executives by consultancy Price Waterhouse.

Under-40s scored marginally better in a numeracy test and were likely to work more conscientiously than older colleagues on boring, repetitive work.

* * *

It's come to this

In a move designed to save $30,000 per year, Mount Albert staff will soon have to forgo their elegant crockery tea cups for self-service disposables.

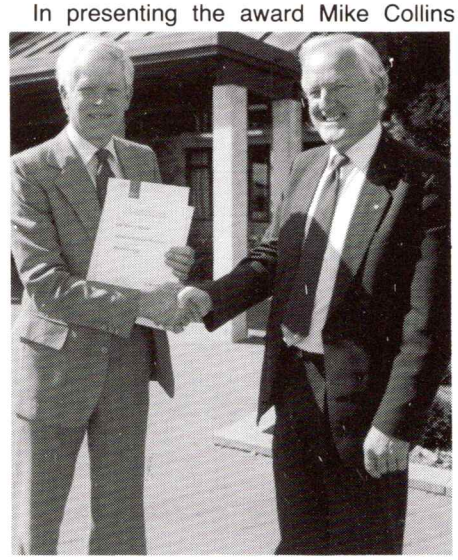
Catering contractors will now only be responsible for providing a non-subsidised lunch service. Dispensers will be installed to cater for the estimated 62,500 cups of tea and coffee consumed annually.

Botanist receives D-G award

Peter Wardle of Land Resources, Lincoln, was presented with a Director-General's award for outstanding achievement on 21 March.

Wardle's major scientific interest has been the ecology of high altitude vegetation, in particular the abrupt upper limit to the forest — the timber-line.

In presenting the award Mike Collins said that Wardle's sustained research effort had advanced international understanding of timber-lines and their causes and had given him a reputation as one of the world's leading ecologists in this field.



His knowledge of New Zealand flora had also enabled him to make a significant contribution to the field of plant biogeography, publishing papers on the changing distribution of vegetation in New Zealand over time.

His soon to be published book *The Vegetation of New Zealand* will be the first comprehensive survey of New Zealand published since the 1930s.

Wardle was awarded the Hector Medal in 1990 by the Royal Society of New Zealand for his contribution to plant ecology.

The Hector Medal was one of the most prestigious awards available to New Zealand scientists, Mike Collins said.

In receiving the Director-General's award Wardle said he was particularly pleased contributions to his area of science were being recognised. He felt the botanical/ecological fields had tended to suffer in relation to the "more high-tech areas of science" in recent years.

Beyond 2000 finds NZ scientists 'a delight'

Headquarters journalist Lindsay Clark received the following message of thanks from Beyond 2000's associate producer Ann Buchner following their recent filming in New Zealand.

"We just got back from our New Zealand jaunt and ended up by filming two DSIR stories:

1. Green dried kiwifruit (DSIR Fruit and Trees — Auckland)
2. Fluoride microprobe (DSIR Physical Sciences — Wellington)

"Both stories turned out well, and all the scientists concerned were a delight to work with. In fact, working in New Zealand was a joy — same language, same culture and (most importantly!) people know our programme. I'll keep you posted as to when the stories are going to air in Australia and New Zealand, but as a rough estimate, it should be around the middle of this year.

"Samantha Hall is looking into sending another crew to N.Z. later this year so will probably be in touch with you soon to discuss stories we still have on file, plus pick your brains for any new ones."

Staff surplus declared

Thirty-one staff across the department were being "declared surplus", the Director-General announced on March 5, due to the financial problems the department was experiencing.

Staff involved were spread between Grasslands (Palmerston North — 10), Land Resources (Dunedin — 1, Taita — 3, Nelson — 2, Palmerston North — 3), Plant Protection (Auckland — 5), Physical Sciences (Gracefield — 4), Industrial Development (Gracefield — 2, Auckland — 1).

Most of the staff declared surplus were tradespeople, farm workers, technical, clerical and administrative staff. Four were designated as scientists but were working mostly in a management or support role.

Mike Collins said the surpluses did not include bench scientists. The Government wanted to maintain the present level of science staffing so as not to prejudice decisions for the new Crown-owned Research Institutes.